

A NEW ENDEMIC SPECIES FOR PUERTO RICO: DENDROPTHORA BERMEJAE (VISCACEAE)

J. Kuijt

Department of Biology
University of Victoria
Victoria, British Columbia V8W 3N5, Canada

T. A. Carlo

Department of Ecology and Evolution
University of Colorado at Boulder
Boulder, Colorado 80309-0334

J. E. Aukema

Department of Zoology
North Carolina State University
Raleigh, North Carolina 27695

ABSTRACT. *Dendrophthora bermejae*, a species endemic to Puerto Rico, is newly described and illustrated. This novelty is similar to *D. serpyllifolia* (Griseb.) from Hispaniola and Cuba. A key to the four species now known from Puerto Rico is provided.

Dendrophthora is a neotropical genus of about 110 species (Kuijt 2000). Beyond the Greater Antilles, it ranges from southern Mexico to Bolivia and is mostly Andean in South America. In the Caribbean, about 32 species are recorded, with major concentrations in Cuba and Hispaniola. Three of the Caribbean species are known from Puerto Rico. The present contribution reports a fourth species from the Cabo Rojo region.

Dendrophthora bermejae Kuijt, Carlo & Aukema, sp. nov.—TYPE: PUERTO RICO. Cabo Rojo: roadside, Hwy PR-302, 17°58'07.8"N, 67°08'04.09"W, on *Guaiacum officinale* L., 30 m, 29 Aug 2004, T. A. Carlo & J. E. Aukema 37 (holotype: UPR!; isotypes: LEA! MAPR! NY! UPRRP! US!). Fig. 1.

Planta glabra, plus minusve erecta, paucifolia, monoica. Inflorescentia plerumque 2–4-juga, internodiis fertilibus unisexualibus, quaque bractea fertili 3–10 flores subtenenti, floribus uniseriatis. Fructus 6 × 3.5 mm, petalis erectis.

Somewhat erect, glabrous, leafy plants, internodes to 4 cm, terete, grooved when dry; base of lateral branches and inflorescences subtended by brownish, carinate prophylls with slightly fimbriate margins, these prophylls occasionally subtending additional inflorescences or innovations; cataphylls absent or one small pair to 1.5 cm above the base, these often fertile. Basal foliar structures transverse. Leaves few, to 5 cm long, to 2 cm wide, obovate, apex rounded to truncate, base tapering to an indistinct petiole ca. 2 mm long; venation more or less palmate, with several veins running far towards the leaf tip. Monoecious. Inflorescences both single on older growth in axillary positions below leaves and in compound, squamate groups distal to them, where usually composed of two or three pairs of lateral inflorescences plus one terminal one. Individual inflorescences to 6.5 cm long, peduncle 1.5–3 cm long, without cataphylls, followed by 3–4 somewhat flattened, uniseriate, fertile internodes, the proximal one or two (three) female, the distal one or two male, the female internodes

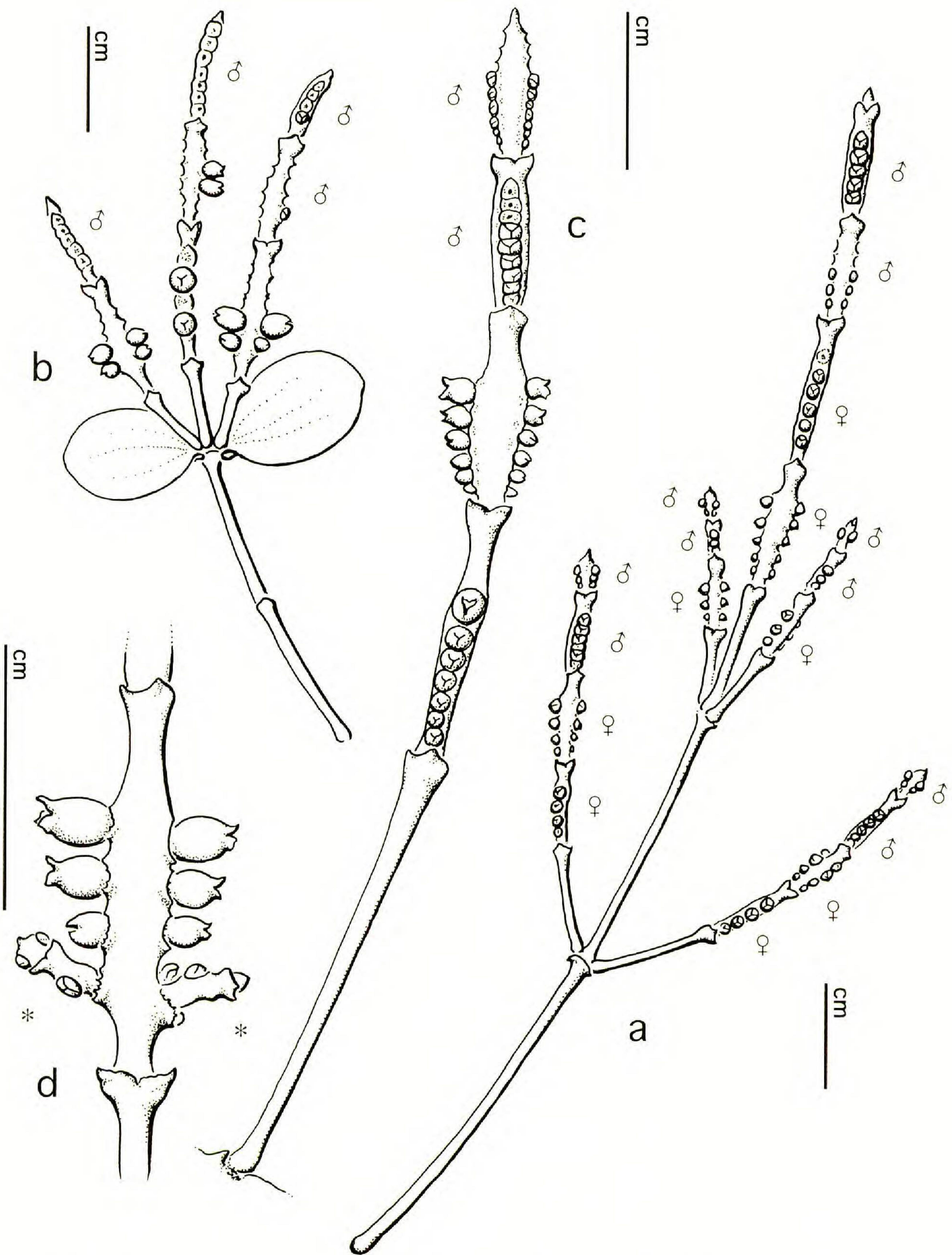


FIG. 1. *Dendrophthora bermejae* (the sex of female internodes is not indicated where fruits are evident). a. Large, squamate compound inflorescence without basal cataphylls. b. Smaller compound inflorescence, with basal cataphylls, the three individual inflorescences subtended by foliage leaves. c. Individual lateral inflorescence, placed below foliage leaves. d. Female fertile internode, the lower flowers replaced by small inflorescences (*). (Based on: a, Carlo *et al.* 32, LEA; b, Carlo & Aukema 5, LEA; c, d, Carlo *et al.* 33, LEA.)

with up to 8 flowers per series (16 per internode), the male internodes to 10 flowers per series (20 per internode), the latter crowded in a groove with low, delicate partitions between flowers. Fruit 6 mm long, 3.5 mm in diameter, ovoid, yellowish green, petals erect.

ADDITIONAL SPECIMENS EXAMINED. **Puerto Rico.** CABO ROJO: Las Palmas, road side, PR-303 at entrance to Pitahaya State Forest, on *Guaiacum officinalis*, Carlo *et al.* 32 (LEA), 33 (LEA), Carlo & Aukema 5 (LEA), 38 (UPR); Las Salinas, on *Guaiacum officinalis*, Chardón *et al.* 500 (UPR); Quebrada Cajú, Liogier 36831 (UPR); Barrio Boquerón, Peñones de Melones, upper slopes near summit, dry forest on limestone, 17°59.83'N, 67°10.97'W, 100 m, on *Guaiacum officinale*, Axelrod & Thomas 7838 (UPRRP).—Without locality: R.O. Woodbury *s.n.* (# 015025) (UPR).

Dendrophthora bermejae represents a remarkable endemic apparently restricted to the southwestern Sierra Bermeja and Costa Bermeja area, where it is presently endangered by residential, commercial, tourist, and agricultural development. It is not known to occur within any protected area. The species appears to be related to *D. serpyllifolia* (Griseb.) Krug & Urb. from Hispaniola and Cuba but, aside from its much larger general stature, is distinct in a number of important respects. *Dendrophthora serpyllifolia* has leaves that rarely exceed 1 cm in length, with a mucronulate apex, and the placement of foliage leaves is irregular. *Dendrophthora bermejae*, instead, has leaves to 5 cm in length, more or less rounded at the tip. *Dendrophthora serpyllifolia* also has cataphylls in several positions, especially on all vegetative laterals and on the lowest inflorescence units of its compound ones (Kuijt 1961); *D. bermejae* has fewer cataphylls. The flowers of *D. serpyllifolia* occur in much smaller series (2–3 flowers per fertile bract) than in *D. bermejae* (to 10 flowers per fertile bract). The sex distribution in *D. serpyllifolia* is uncertain but the species is probably dioecious; in any case, it does not have the almost invariable, curious distribution of male and female flowers, or the slightly flattened fertile internodes exhibited by the present species.

Dendrophthora bermejae shows an unusual variability in several morphological aspects. Some inflorescences and lateral branches bear basal cataphylls, while others do not; we have not found any regularity in this feature except that the individual inflorescences making up a compound arrangement never seem to bear cataphylls. It is common for inflorescences to be associated with the axils of cataphylls, a phenomenon not known elsewhere in *Dendrophthora* although known from several species of the closely related *Phoradendron* (Kuijt 2003). The inflorescences of a compound cluster may be subtended by foliage leaves or not.

In one of the collections cited (Carlo *et al.* 33), the lowest two flowers of a number of female fertile internodes have been replaced by small lateral inflorescences (Fig. 1d). This is probably teratological in nature, and is also occasionally encountered in other species of *Dendrophthora* and *Phoradendron* (see Kuijt 1959, Fig. 11c).

The four species of *Dendrophthora* known from Puerto Rican may be distinguished with the following key.

KEY TO THE SPECIES OF DENDROPHTHORA IN PUERTO RICO

1. Fruits 1 or 2 per fertile bract; plants monoecious or dioecious.
 2. Young branches with minute, glistening epidermal hairs; female flowers (1) 2 per fertile bract; prophylls inconspicuous, not obviously fused. *D. brachylepis* Urb.
 2. Young branches glabrous; female flowers 1 per fertile bract; prophylls conspicuous, fused into a compound structure. *D. domingensis* (Spreng.) Eichler
1. Fruits 3–8 per fertile bract; plants monoecious.
 3. Male and female flowers intermixed; inflorescence branches often sinuous, fertile internodes 1–12 (–20) per inflorescence, flowers 5 or 6 per fertile bract; fruits eventually widely spaced along the fertile internode. *D. flagelliformis* (Lam.) Krug & Urb.
 3. Male and female flowers on separate internodes, the male flowers on terminal internode, the female flowers on lower ones; inflorescence branches more or less straight; fertile internodes 3 or 4 per inflorescence, each bearing 3–10 flowers; fruits crowded on fertile internode. *D. bermejae*

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